

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

Sequence Range: 1 to 2605

```

      10      20      30      40      50
*      *      *      *      *
GG ATC CTT TTC TAT TAA ACA TAT AAA TTC TTT TTT ATG TTA TAT ATT TAT
Ile Leu Phe Tyr *** Thr Tyr Lys Phe Phe Phe Met Leu Tyr Ile Tyr>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      60      70      80      90
*      *      *      *
AAA AGT TCT GTT TAA AAA GCC AAA AAT AAA TAA TTA TCT CTT TTT ATT
Lys Ser Ser Val *** Lys Ala Lys Asn Lys *** Leu Ser Leu Phe Ile>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

100      110      120      130      140
*      *      *      *      *
TAT ATT ATA TTG AAA CTA AAG TTT ATT AAT TTC AAT ATA ATA TAA ATT
Tyr Ile Ile Leu Lys Leu Lys Phe Ile Asn Phe Asn Ile Ile *** Ile>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

150      160      170      180      190
*      *      *      *      *
TAA TTT TAT ACA AAA AGG AGA ACG TAT ATG AAA AAA CGA AAA GTG TTA
*** Phe Tyr Thr Lys Arg Arg Thr Tyr Met Lys Lys Arg Lys Val Leu>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

200      210      220      230      240
*      *      *      *      *
ATA CCA TTA ATG GCA TTG TCT ACG ATA TTA GTT TCA AGC ACA GGT AAT
Ile Pro Leu Met Ala Leu Ser Thr Ile Leu Val Ser Ser Thr Gly Asn>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

250      260      270      280      290
*      *      *      *      *
TTA GAG GTG ATT CAG GCA GAA GTT AAA CAG GAG AAC CGG TTA TTA AAT
Leu Glu Val Ile Gln Ala Glu Val Lys Gln Glu Asn Arg Leu Leu Asn>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

300      310      320      330
*      *      *      *
GAA TCA GAA TCA AGT TCC CAG GGG TTA CTA GGA TAC TAT TTT AGT GAT
Glu Ser Glu Ser Ser Ser Gln Gly Leu Leu Gly Tyr Tyr Phe Ser Asp>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

340      350      360      370      380
*      *      *      *      *
TTG AAT TTT CAA GCA CCC ATG GTG GTT ACC TCT TCT ACT ACA GGG GAT
Leu Asn Phe Gln Ala Pro Met Val Val Thr Ser Ser Thr Thr Gly Asp>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

390      400      410      420      430
*      *      *      *      *
TTA TCT ATT CCT AGT TCT GAG TTA GAA AAT ATT CCA TCG GAA AAC CAA
Leu Ser Ile Pro Ser Ser Glu Leu Glu Asn Ile Pro Ser Glu Asn Gln>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

440      450      460      470      480
*      *      *      *      *
TAT TTT CAA TCT GCT ATT TGG TCA GGA TTT ATC AAA GTT AAG AAG AGT
Tyr Phe Gln Ser Ala Ile Trp Ser Gly Phe Ile Lys Val Lys Lys Ser>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

```

Insert 110-1

246

PA and signal sequence

PA start

** signal peptide **

Mature PA

FIGURE 1A

```

      490      500      510      520      530
      *      *      *      *      *
GAT GAA TAT ACA TTT GCT ACT TCC GCT GAT AAT CAT GTA ACA ATG TGG
Asp Glu Tyr Thr Phe Ala Thr Ser Ala Asp Asn His Val Thr Met Trp>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      540      550      560      570
      *      *      *      *      *
GTA GAT GAC CAA GAA GTG ATT AAT AAA GCT TCT AAT TCT AAC AAA ATC
Val Asp Asp Gln Glu Val Ile Asn Lys Ala Ser Asn Ser Asn Lys Ile>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

580      590      600      610      620
*      *      *      *      *
AGA TTA GAA AAA GGA AGA TTA TAT CAA ATA AAA ATT CAA TAT CAA CGA
Arg Leu Glu Lys Gly Arg Leu Tyr Gln Ile Lys Ile Gln Tyr Gln Arg>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      630      640      650      660      670
      *      *      *      *      *
GAA AAT CCT ACT GAA AAA GGA TTG GAT TTC AAG TTG TAC TGG ACC GAT
Glu Asn Pro Thr Glu Lys Gly Leu Asp Phe Lys Leu Tyr Trp Thr Asp>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      680      690      700      710      720
      *      *      *      *      *
TCT CAA AAT AAA AAA GAA GTG ATT TCT AGT GAT AAC TTA CAA TTG CCA
Ser Gln Asn Lys Lys Glu Val Ile Ser Ser Asp Asn Leu Gln Leu Pro>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      730      740      750      760      770
      *      *      *      *      *
GAA TTA AAA CAA AAA TCT TCG AAC TCA AGA AAA AAG CGA AGT ACA AGT
Glu Leu Lys Gln Lys Ser Ser Asn Ser Arg Lys Lys Arg Ser Thr Ser>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      780      790      800      810
      *      *      *      *      *
GCT GGA CCT ACG GTT CCA GAC CGT GAC AAT GAT GGA ATC CCT GAT TCA
Ala Gly Pro Thr Val Pro Asp Arg Asp Asn Asp Gly Ile Pro Asp Ser>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

820      830      840      850      860
*      *      *      *      *
TTA GAG GTA GAA GGA TAT ACG GTT GAT GTC AAA AAT AAA AGA ACT TTT
Leu Glu Val Glu Gly Tyr Thr Val Asp Val Lys Asn Lys Arg Thr Phe>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      870      880      890      900      910
      *      *      *      *      *
CTT TCA CCA TGG ATT TCT AAT ATT CAT GAA AAG AAA GGA TTA ACC AAA
Leu Ser Pro Trp Ile Ser Asn Ile His Glu Lys Lys Gly Leu Thr Lys>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      920      930      940      950      960
      *      *      *      *      *
TAT AAA TCA TCT CCT GAA AAA TGG AGC ACG GCT TCT GAT CCG TAC AGT
Tyr Lys Ser Ser Pro Glu Lys Trp Ser Thr Ala Ser Asp Pro Tyr Ser>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

      970      980      990      1000      1010
      *      *      *      *      *

```

FIGURE 1B

GAT TTC (AAG GTT ACA GGA CGG ATT GAT A AAT GTA TCA CCA GAG
 Asp Phe Glu Lys Val Thr Gly Arg Ile Asp Lys Asn Val Ser Pro Glu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1020 1030 1040 1050
 * * * * *
 GCA AGA CAC CCC CTT GTG GCA GCT TAT CCG ATT GTA CAT GTA GAT ATG
 Ala Arg His Pro Leu Val Ala Ala Tyr Pro Ile Val His Val Asp Met>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1060 1070 1080 1090 1100
 * * * * *
 GAG AAT ATT ATT CTC TCA AAA AAT GAG GAT CAA TCC ACA CAG AAT ACT
 Glu Asn Ile Ile Leu Ser Lys Asn Glu Asp Gln Ser Thr Gln Asn Thr>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1110 1120 1130 1140 1150
 * * * * *
 GAT AGT GAA ACG AGA ACA ATA AGT AAA AAT ACT TCT ACA AGT AGG ACA
 Asp Ser Glu Thr Arg Thr Ile Ser Lys Asn Thr Ser Thr Ser Arg Thr>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1160 1170 1180 1190 1200
 * * * * *
 CAT ACT AGT GAA GTA CAT GGA AAT GCA GAA GTG CAT GCG TCG TTC TTT
 His Thr Ser Glu Val His Gly Asn Ala Glu Val His Ala Ser Phe Phe>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1210 1220 1230 1240 1250
 * * * * *
 GAT ATT GGT GGG AGT GTA TCT GCA GGA TTT AGT AAT TCG AAT TCA AGT
 Asp Ile Gly Gly Ser Val Ser Ala Gly Phe Ser Asn Ser Asn Ser Ser>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1260 1270 1280 1290
 * * * * *
 ACG GTC GCA ATT GAT CAT TCA CTA TCT CTA GCA GGG GAA AGA ACT TGG
 Thr Val Ala Ile Asp His Ser Leu Ser Leu Ala Gly Glu Arg Thr Trp>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1300 1310 1320 1330 1340
 * * * * *
 GCT GAA ACA ATG GGT TTA AAT ACC GCT GAT ACA GCA AGA TTA AAT GCC
 Ala Glu Thr Met Gly Leu Asn Thr Ala Asp Thr Ala Arg Leu Asn Ala>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1350 1360 1370 1380 1390
 * * * * *
 AAT ATT AGA TAT GTA AAT ACT GGG ACG GCT CCA ATC TAC AAC GTG TTA
 Asn Ile Arg Tyr Val Asn Thr Gly Thr Ala Pro Ile Tyr Asn Val Leu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1400 1410 1420 1430 1440
 * * * * *
 CCA ACG ACT TCG TTA GTG TTA GGA AAA AAT CAA ACA CTC GCG ACA ATT
 Pro Thr Thr Ser Leu Val Leu Gly Lys Asn Gln Thr Leu Ala Thr Ile>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1450 1460 1470 1480 1490
 * * * * *
 AAA GCT AAG GAA AAC CAA TTA AGT CAA ATA CTT GCA CCT AAT AAT TAT
 Lys Ala Lys Glu Asn Gln Leu Ser Gln Ile Leu Ala Pro Asn Asn Tyr>

FIGURE 1C

```

a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1500      1510      1520      1530
* * * * *
TAT CCT TCT AAA AAC TTG GCG CCA ATC GCA TTA AAT GCA CAA GAC GAT
Tyr Pro Ser Lys Asn Leu Ala Pro Ile Ala Leu Asn Ala Gln Asp Asp>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1540      1550      1560      1570      1580
* * * * *
TTC AGT TCT ACT CCA ATT ACA ATG AAT TAC AAT CAA TTT CTT GAG TTA
Phe Ser Ser Thr Pro Ile Thr Met Asn Tyr Asn Gln Phe Leu Glu Leu>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1590      1600      1610      1620      1630
* * * * *
GAA AAA ACG AAA CAA TTA AGA TTA GAT ACG GAT CAA GTA TAT GGG AAT
Glu Lys Thr Lys Gln Leu Arg Leu Asp Thr Asp Gln Val Tyr Gly Asn>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1640      1650      1660      1670      1680
* * * * *
ATA GCA ACA TAC AAT TTT GAA AAT GGA AGA GTG AGG GTG GAT ACA GGC
Ile Ala Thr Tyr Asn Phe Glu Asn Gly Arg Val Arg Val Asp Thr Gly>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1690      1700      1710      1720      1730
* * * * *
TCG AAC TGG AGT GAA GTG TTA CCG CAA ATT CAA GAA ACA ACT GCA CGT
Ser Asn Trp Ser Glu Val Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1740      1750      1760      1770
* * * * *
ATC ATT TTT AAT GGA AAA GAT TTA AAT CTG GTA GAA AGG CGG ATA GCG
Ile Ile Phe Asn Gly Lys Asp Leu Asn Leu Val Glu Arg Arg Ile Ala>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1780      1790      1800      1810      1820
* * * * *
GCG GTT AAT CCT AGT GAT CCA TTA GAA ACG ACT AAA CCG GAT ATG ACA
Ala Val Asn Pro Ser Asp Pro Leu Glu Thr Thr Lys Pro Asp Met Thr>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1830      1840      1850      1860      1870
* * * * *
TTA AAA GAA GCC CTT AAA ATA GCA TTT GGA TTT AAC GAA CCG AAT GGA
Leu Lys Glu Ala Leu Lys Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1880      1890      1900      1910      1920
* * * * *
AAC TTA CAA TAT CAA GGG AAA GAC ATA ACC GAA TTT GAT TTT AAT TTC
Asn Leu Gln Tyr Gln Gly Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

1930      1940      1950      1960      1970
* * * * *
GAT CAA CAA ACA TCT CAA AAT ATC AAG AAT CAG TTA GCG GAA TTA AAC
Asp Gln Gln Thr Ser Gln Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn>
a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

```

FIGURE 1D

80 1990 2000 2010
 * * * * *
 GCA ACT AAC ATA TAT ACT GTA TTA GAT AAA ATC AAA TTA AAT GCA AAA
 Ala Thr Asn Ile Tyr Thr Val Leu Asp Lys Ile Lys Leu Asn Ala Lys>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2020 2030 2040 2050 2060
 * * * * *
 ATG AAT ATT TTA ATA AGA GAT AAA CGT TTT CAT TAT GAT AGA AAT AAC
 Met Asn Ile Leu Ile Arg Asp Lys Arg Phe His Tyr Asp Arg Asn Asn>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2070 2080 2090 2100 2110
 * * * * *
 ATA GCA GTT GGG GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA
 Ile Ala Val Gly Ala Asp Glu Ser Val Val Lys Glu Ala His Arg Glu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2120 2130 2140 2150 2160
 * * * * *
 GTA ATT AAT TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT
 Val Ile Asn Ser Ser Thr Glu Gly Leu Leu Leu Asn Ile Asp Lys Asp>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2170 2180 2190 2200 2210
 * * * * *
 ATA AGA AAA ATA TTA TCA GGT TAT ATT GTA GAA ATT GAA GAT ACT GAA
 Ile Arg Lys Ile Leu Ser Gly Tyr Ile Val Glu Ile Glu Asp Thr Glu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2220 2230 2240 2250
 * * * * *
 GGG CTT AAA GAA GTT ATA AAT GAC AGA TAT GAT ATG TTG AAT ATT TCT
 Gly Leu Lys Glu Val Ile Asn Asp Arg Tyr Asp Met Leu Asn Ile Ser>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2260 2270 2280 2290 2300
 * * * * *
 AGT TTA CGG CAA GAT GGA AAA ACA TTT ATA GAT TTT AAA AAA TAT AAT
 Ser Leu Arg Gln Asp Gly Lys Thr Phe Ile Asp Phe Lys Lys Tyr Asn>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2310 2320 2330 2340 2350
 * * * * *
 GAT AAA TTA CCG TTA TAT ATA AGT AAT CCC AAT TAT AAG GTA AAT GTA
 Asp Lys Leu Pro Leu Tyr Ile Ser Asn Pro Asn Tyr Lys Val Asn Val>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2360 2370 2380 2390 2400
 * * * * *
 TAT GCT GTT ACT AAA GAA AAC ACT ATT ATT AAT CCT AGT GAG AAT GGG
 Tyr Ala Val Thr Lys Glu Asn Thr Ile Ile Asn Pro Ser Glu Asn Gly>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2410 2420 2430 2440 2450
 * * * * *
 GAT ACT AGT ACC AAC GGG ATC AAG AAA ATT TTA ATC TTT TCT AAA AAA
 Asp Thr Ser Thr Asn Gly Ile Lys Lys Ile Leu Ile Phe Ser Lys Lys>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2460 2470 2480 2490
 * * * * *

FIGURE 1E

2147
 PA ORF ← Stop codon
 GGC TAT GAG ATA GGA TAA GGT AAT TCT AGG TGA TTT TTA AAT TAT CTA
 Gly Tyr Glu Ile Gly *** Gly Asn Ser Arg *** Phe Leu Asn Tyr Leu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2500 2510 2520 2530 2540
 * * * * * *
 AAA AAC AGT AAA ATT AAA ACA TAC TCT TTT TGT AAG AAA TAC AAG GAG
 Lys Asn Ser Lys Ile Lys Thr Tyr Ser Phe Cys Lys Lys Tyr Lys Glu>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2550 2560 2570 2580 2590
 * * * * * *
 AGT ATG TTT TAA ACA GTA ATC TAA ATC ATC ATA ATC CTT TGA GAT TGT
 Ser Met Phe *** Thr Val Ile *** Ile Ile Ile Ile Leu *** Asp Cys>
 a a a a TRANSLATION OF UNTITLED2 [A] a a a a >

2600
 * * *
 TTG TAG GAT CC
 Leu *** Asp Pro>
 a a a >

FIGURE 1F

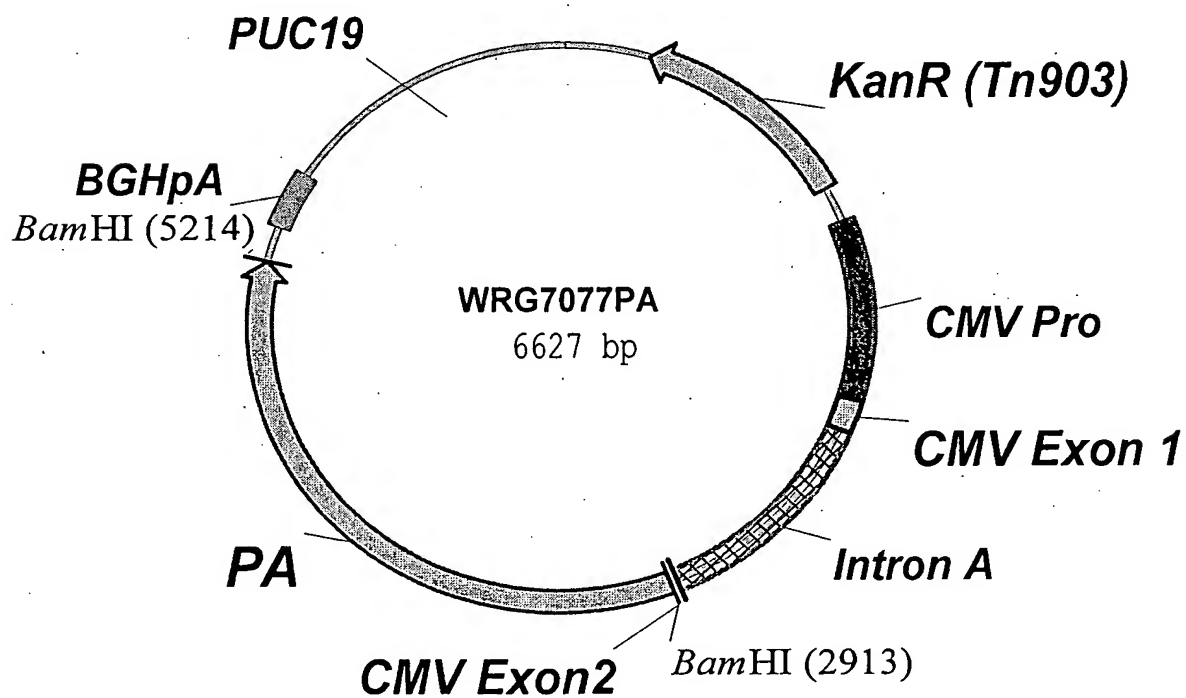
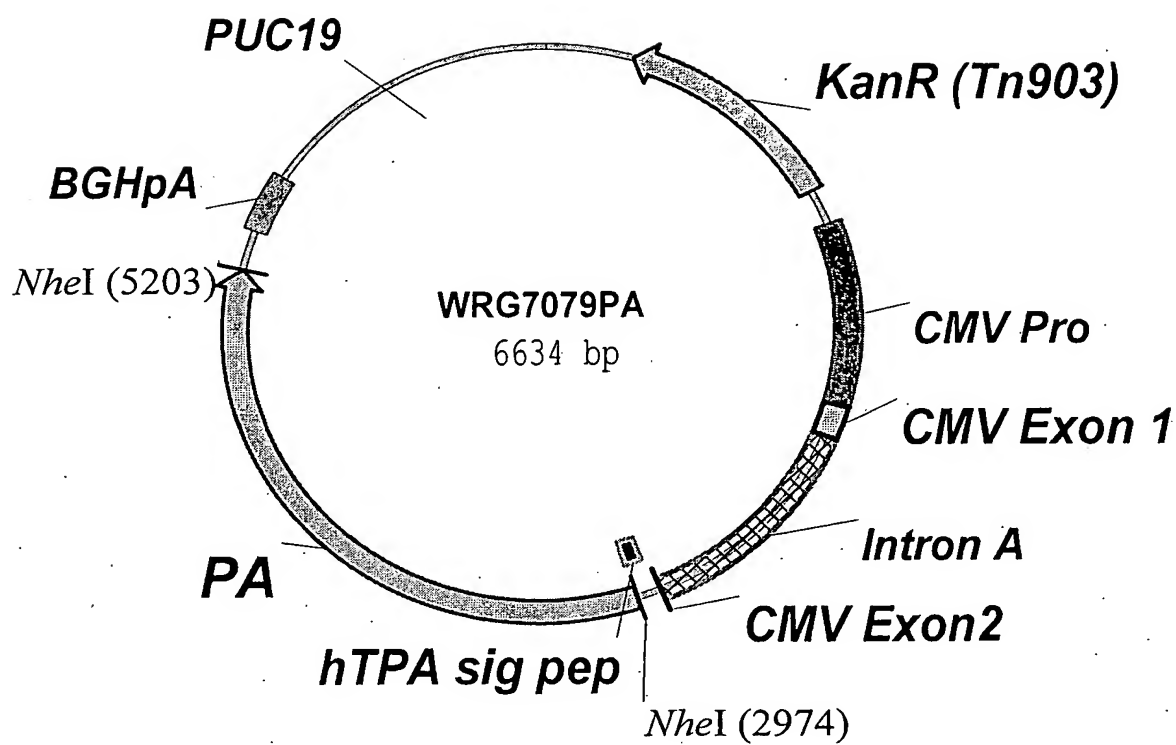


Figure 2

Figure 3

